

Patterns and Trends in Drug Abuse in Denver and Colorado: 2013

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ABSTRACT

The key findings in the Denver area for the 2013 reporting period were increases in indicators for marijuana, heroin, and methamphetamine. After alcohol, marijuana has continued to result in the highest number of primary treatment admissions in Denver and statewide in Colorado annually. Although indicators showed some mixed trends, marijuana continued to be a major drug of abuse in Colorado and in the Denver/Boulder metropolitan area, based on treatment admissions data, drug-related hospital discharge data, emergency department data, data from the National Survey for Drug Use and Health (NSDUH), law enforcement drug testing data, and availability. Statewide, the proportion of primary marijuana treatment admissions declined slightly over the past couple of years, from 20.6 percent of all admissions in 2011, to 19.1 percent in 2012, and to 18.1 percent in 2013 (including alcohol). Similarly, Denver/Boulder metropolitan area (greater Denver) primary marijuana treatment admissions decreased in recent years, from 21.7 percent in 2011, to 19.9 percent in 2012, and to 18.1 percent in 2013. Marijuana ranked first in Denver/Boulder metropolitan drug-related hospital discharges in 2013 (excluding alcohol); both the number and rate of discharges increased from 2012 (122.2 per 100,000 population) to 2013 (156.7 per 100,000). In the Denver area, marijuana/cannabis ranked third, at 15.4 percent, among drug reports detected in drug items seized and analyzed in 2013 in National Forensic Laboratory Information System (NFLIS) laboratories. Marijuana-related calls to the Rocky Mountain Poison and Drug Center (RMPDC) ranked first among all calls statewide in 2013 (excluding alcohol) for the second year in a row, with 136 marijuana human exposure calls. All of the high-ranking indicators for cocaine continued to show downward trends. In 2013, cocaine ranked fifth in both statewide treatment admissions (the same as 2012) and Denver metropolitan area treatment admissions (a decline from fourth rank), excluding alcohol. Primary cocaine treatment admissions for both areas have steadily decreased over the past 5 years. Cocaine was the third most common drug (excluding alcohol) statewide (behind other opioids and stimulants) and fourth in the Denver metropolitan area (behind other opioids, heroin, and stimulants) in drug-related deaths in 2013. In 2013, cocaine ranked third (behind marijuana and methamphetamine) for statewide illicit drug-related calls to the RMPDC. In the Denver area, cocaine ranked first in 2013 (at 24.4 percent) among drug reports detected in seized and analyzed items in NFLIS laboratories. Methamphetamine indicators have shown some increasing trends. Methamphetamine was more common than all other drugs except marijuana among treatment admissions both statewide and in the Denver/Boulder area in recent years, except for 2013, in the Denver/Boulder area. Although the proportion of statewide methamphetamine admissions steadily declined from 2005 to 2009, such admissions have increased slightly, climbing from 14.4 to 17.2 percent from 2009 to 2013 (including alcohol). Denver area methamphetamine admissions have remained fairly stable over recent years and represented 12.4 percent of

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treatment admissions in 2013. Stimulants (mostly methamphetamine) ranked third in Colorado drug-related hospital discharges, excluding alcohol, in 2013; this was an increase from fourth rank in 2012. In the Denver/Boulder area, stimulants ranked fourth in drug-related hospital discharges in 2013, excluding alcohol, which was the same as in 2012. Stimulants were the second most common drug category in Colorado deaths (excluding alcohol) in 2013; this represented an increase from fourth in 2012. In the Denver/Boulder area, stimulants were the third most common drug among drug-related deaths (excluding alcohol) in 2013; this was an increase from fourth in 2012. Methamphetamine was readily available, due to heavy trafficking from Mexico. Overall, heroin indicators had some mixed ranks with increasing trends. Statewide and Denver area proportions of heroin treatment admissions have been increasing since 2008. Statewide heroin treatment admissions increased from 7.2 percent of total admissions in 2011 to 9.7 percent in 2013 (including alcohol). Denver area heroin treatment admissions increased also, from 10.2 percent of total admissions in 2011 to 12.9 percent in 2013 (including alcohol). Heroin ranked second (excluding alcohol) among the most common drugs found in Denver/Boulder area death mentions, and it increased from a rate of 1.3 per 100,000 population in 2007 to a rate of 2.6 per 100,000 in 2013. RMPDC calls related to heroin/morphine increased from 19 calls in 2010 to 50 calls in 2012; they declined slightly to 44 calls in 2013. Other opioid indicators had mixed ranks with mostly increasing trends. Proportions of both statewide and Denver area other opioid treatment admissions continued to increase over recent years. In 2013, statewide other opioid treatment admissions remained at the same level as in 2012, at 7 percent (including alcohol). Denver area primary treatment admissions for other opioids in 2013 (at 6.3 percent) remained at about the same level as in 2012 (6.5 percent). The rate of Colorado and Denver/Boulder area other opioid hospital discharges steadily increased over recent years (although stable from 2012 to 2013), and other opioids were the most common drugs found in Colorado and Denver/Boulder drug-related decedents in 2012 and 2013 (excluding alcohol). Benzodiazepines (including the categories of “benzos,” barbiturates, clonazepam, other sedatives, and tranquilizers) represented less than 1.0 percent of State and Denver/Boulder area treatment admissions in 2013. Synthetic cannabinoids, such as “Spice,” “K2,” and “Black Mamba,” and synthetic cathinones marketed as “bath salts” with names such as “Cloud Nine,” “Vanilla Sky,” and “White Dove” have been a recent concern. However, there are few indicators that have the ability to isolate and capture data for synthetic cannabinoids and synthetic cathinones, making it difficult to determine actual usage levels. There were an estimated 100 synthetic cannabinoid emergency department cases in Denver in 2013, along with 1 death reported by the Denver Office of the Medical Examiner. The Denver Crime Laboratory (DCL) has experienced a dramatic increase in synthetic drug exhibits analyzed: from 4 in 2010, to 7 in 2011, to 84 in 2012, and 274 in 2013 with various combinations. Synthetic cannabinoids are scheduled in Colorado, which may limit future availability and use; however, they continue to appear in the DCL data. Beyond abuse of illicit drugs, alcohol remained Colorado’s most frequently abused substance and accounted for the most treatment admissions, poison control center calls, drug-related hospital discharges, emergency department visits, and drug-related deaths in this reporting period.

INTRODUCTION

Area Description

Denver, the capital of Colorado, is located slightly northeast of the State's geographic center. Covering only 154.6 square miles, Denver is bordered by several suburban counties: Arapahoe on the southeast, Adams on the northeast, Jefferson on the west, Broomfield on the northwest, and Douglas on the south. These areas made up the Denver Metropolitan Statistical Area through 2004, which accounted for 50 percent of the State's total population.

For this report, both statewide data and data for the Denver/Boulder metropolitan area were analyzed; the latter includes the counties of Denver, Boulder, Adams, Arapahoe, Broomfield, Clear Creek, Douglas, Gilpin, and Jefferson and accounts for 56 percent of the total State population (2,798,757 out of 5,029,196; 2010 U.S. Census).

Excluding Gilpin and Clear Creek Counties (which are usually left out of Denver metropolitan area statistics), the median age of residents in the Denver area was 35.5 in 2010. Males constitute 50.7 percent of the population. Ethnic and racial characteristics of the area are as follows: Whites constitute 67 percent of the population; Black/African-Americans constitute 5 percent; 0.5 percent are American Indians; and 4 percent are Asian/Pacific Islanders. Those of Hispanic origin (of any race) represent 22 percent of the area's population.

Two major interstate highways, I-25 and I-70, intersect in Denver—I-25 runs north-south from Wyoming through New Mexico, and I-70 runs east-west from Maryland through Utah. The easy transit across multiple States facilitated by these highways, along with the following other factors, may influence drug use in Denver and Colorado, along with the following factors:

- The area's major international airport is nearly at the Nation's midpoint.
- The area has a growing population and expanding economic opportunities.
- A large tourism industry draws millions of people to Colorado each year.
- Remote, rural areas are ideal for the undetected manufacture, cultivation, and transport of illicit drugs.
- Several major universities and small colleges are located in the area.
- A young citizenry is drawn to the recreational lifestyle available in Colorado.

Data Sources

The data sources used in this report are listed below:

- **Treatment admissions data** were provided by the Drug/Alcohol Coordinated Data System (DACODS), which is maintained by the Office of Behavioral Health (OBH) at the Colorado Department of Human Services. Data for this system are collected on clients at admission and discharge from all Colorado alcohol and drug treatment agencies licensed by OBH. Treatment admissions

are reported by the primary drug of use (as reported by the client at admission), unless otherwise specified. Annual figures are given for 2005–2013.

- **Hospital discharge data** for the State of Colorado and for the Denver metropolitan area were obtained from the Colorado Department of Public Health and Environment (CDPHE). Data include diagnoses (ICD-9-CM codes) for inpatient clients at discharge from all acute care hospitals and some rehabilitation and psychiatric hospitals. These data exclude emergency department (ED) care. These data represent 2013 and are the most recent data available.
- **Drug-related mortality data** for the State of Colorado and for the Denver metropolitan area were obtained from the CDPHE and represent 2013. These are the most recent data available. Drug mortality data are also shown for 2003 through 2013 for the city and county of Denver. These data come directly from autopsy reports from the Denver Office of the Medical Examiner (OME).
- **Rocky Mountain Poison and Drug Center (RMPDC) data** are presented for Colorado. The data represent the number of calls (human exposure only) to the center regarding “street drugs” for 2004–2013. Also presented are 2011 human exposure call data for “THC homologs” (synthetic cannabinoids) and synthetic cathinones (marketed as “bath salts”). These are the most recent data available.
- **National Forensic Laboratory Information System (NFLIS) data** for drug reports among drug items seized and analyzed in forensic laboratories are presented for Denver, Jefferson, and Arapahoe Counties for 2012. NFLIS is a Drug Enforcement Administration (DEA) program through the Office of Diversion Control that systematically collects drug identification results and associated information from drug cases analyzed by Federal, State, and local forensic laboratories. NFLIS methodology allows for the accounting of up to three drugs per item submitted for analysis. The data presented are a combined count including primary, secondary, and tertiary reports for each drug. Data for 2013 are preliminary and subject to change.
- **Statistics on prescriptions** filled for Denver residents by drug type, for the first quarter of 2008 through the fourth quarter of 2013, were obtained from the Colorado Prescription Drug Monitoring Program (PDMP), Colorado Department of Regulatory Agencies, Division of Registrations, Board of Pharmacy.
- **Availability and price data** were obtained from the Denver Epidemiology Work Group (DEWG), which includes participants from the Denver Field Division of the DEA.
- **Intelligence data and qualitative data** were obtained from the DEWG, whose membership includes clinicians, outreach workers, researchers, medical examiner’s office staff, public health officials, and regional and local law enforcement officials (including the Denver Police Department) (exhibit 1).
- **Acquired immunodeficiency syndrome (AIDS) data and human immunodeficiency virus (HIV) data** were obtained from the CDPHE and are presented through December 2013.
- **Population statistics** were obtained from the Division of Local Government, State Demography Office, 2010 U.S. Census, including estimates and projections, and from factfinder2.census.gov.

DRUG ABUSE PATTERNS AND TRENDS

Cocaine

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—cocaine ranked fifth among statewide primary treatment admissions, fourth among Denver metropolitan area treatment admissions, third among statewide calls to the RMPDC, second among Colorado death mentions, fourth among Colorado hospital discharges, third among Denver metropolitan area and fourth among statewide ED visits, and first in the proportion of drug reports detected among items seized and analyzed in Denver metropolitan area NFLIS laboratories. Some of the once high-ranking indicators continued to decline with all downward trends.

During 2013, cocaine was reported as a primary drug for 5.4 percent of primary treatment admissions (including alcohol) statewide; this was down from 6.8 percent in 2012 and reflects a new low (exhibit 2). Cocaine admissions statewide declined by 54.4 percent from 2008 to 2013. In the Denver metropolitan area, cocaine was reported for 8.9 percent of treatment admissions (including alcohol) during 2013 (exhibit 3). This proportion is about the same as in 2012 (8.7 percent) but down substantially from a high of 15.1 percent in 2006. Cocaine admissions declined by 57.8 percent from 2008 to 2013.

Statewide, the proportion of male cocaine admissions (61.7 percent in 2013) remained relatively stable over the last 5 years (exhibit 4). In the Denver metropolitan area, the proportion of male cocaine admissions increased from 55.0 to 62.2 percent from 2008 to 2013 (exhibit 5). Historically, Whites have accounted for the largest proportion of cocaine admissions statewide, although they declined from 43.3 to 36.7 percent from 2007 to 2013. The proportion of African-American cocaine treatment admissions increased from 18.6 percent in 2007 to 27.8 percent in 2013. Statewide, in 2013, the proportion of Hispanics/Latinos represented 32.4 percent of total admissions; this proportion has remained relatively steady since 2007. In Denver, Hispanic/Latinos represented 29.9 percent of cocaine admissions, which has also remained fairly steady since 2007. From 2007 to 2013, the proportion of African-American treatment admissions increased, from 22.9 to 31.3 percent, in the Denver metropolitan area.

Statewide, 0.8 percent of all primary cocaine admissions in 2013 were for clients younger than 18, and 9.7 percent were for clients age 18–24 (exhibit 4). The 25–44 age group's proportion of cocaine treatment admissions declined steadily, from 62.3 to 56.5 percent from 2007 to 2013, while the proportion of admissions among clients older than 44 increased from 22.9 to 33.0 percent from 2007 to 2013. This is indicative of an aging cohort. The Denver metropolitan area showed similar trends. A decline was observed in cocaine admissions for clients age 25–44 (from 61.5 to 55.6 percent from 2007 to 2013), and there was a corresponding increase in clients older than 44 (from 24.9 to 34.4 percent from 2007 to 2013).

Statewide, in 2013, the proportions of all admitted clients who smoked, inhaled, or injected cocaine as their primary route of administration were 58.1, 32.4, and 5.9 percent, respectively (exhibit 4). The proportion who smoked remained fairly stable, at 58.6 percent in 2007 and 58.1 percent in 2013. The proportion of cocaine admissions inhaling cocaine has also remained fairly stable in recent years, at 32.8 percent in 2007 and 32.4 percent in 2013. The proportion injecting remained fairly stable, at 6.6 percent in 2007 and 5.9 percent in 2013. The 2013 Denver area proportions of cocaine users who smoked, inhaled, or injected the drug were 56.4, 35.1, and 5.0 percent, respectively

(exhibit 5). As with the statewide trends, the Denver metropolitan cocaine route of administration trends were also relatively stable. Treatment admissions data showed that cocaine users most often used alcohol as a secondary drug (exhibits 4 and 5).

In the Denver metropolitan area, cocaine accounted for the second highest hospital discharge rate after alcohol in 2007, but it dropped to the fourth highest following alcohol, prescription opioids, and marijuana from 2008 through 2013. The number of cocaine hospital discharges in the Denver metropolitan area declined from 2,583 to 1,882 from 2007 to 2013, with the rate per 100,000 population declining by 34 percent, from 96.2 to 63.5 per 100,000 during the same time period.

Cocaine was the second most common drug (excluding alcohol) behind other opioids in Denver metropolitan drug mortality from 2007 through 2012. However, in 2013, the cocaine mortality rate in the Denver metropolitan area ranked fourth, behind other opioids, heroin, and stimulants. Both the number and rate of cocaine mortality in the Denver metropolitan area declined from 2007 to 2013, with the number decreasing from 155 to 65 and the rate per 100,000 population declining from a high of 5.8 deaths per 100,000 in 2007 to only 2.2 deaths per 100,000 in 2013. In a special study of alcohol and drug mortality with the Denver OME in which drugs are identified in autopsy reports (i.e., those contributing to death), cocaine had been the most common drug identified (excluding alcohol) as a percentage of total alcohol and drug deaths from 2004 to 2011. However, during that time, it declined from a high of 50.3 percent of total Denver alcohol and drug deaths to 28.9 percent. In 2012, cocaine was second (excluding alcohol) at 17 percent, behind heroin; in 2013, cocaine was third (excluding alcohol) at 12.5 percent, behind heroin and methamphetamine.

For the Denver metropolitan area in 2012, cocaine had the fourth highest rate of drug-involved ED visits after alcohol, marijuana, and prescription opioids. During this same year, the highest rates among cocaine-involved ED visits were males age 18–25 (at 157.2 per 100,000 population) and males age 35–44 (at 150.7 per 100,000). Denver metropolitan area cocaine-involved ED rates declined from 84.43 to 73.53 per 100,000 between 2011 and 2012.

Cocaine-related human exposure calls to the RMPDC declined overall from 120 in 2004 to 64 in 2010, but such calls had surged to 96 in 2011. The cocaine calls then declined to 64 in 2012 and rebounded somewhat to 80 in 2013. The cocaine calls for each year from 2007 to 2013 were still well below the peak of 129 calls for 2006.

Reports of drugs detected among items seized and analyzed in Federal, State, and local forensic laboratories and reported to the DEA's NFLIS system are shown in exhibit 6 for 2013 for the Denver area (Denver, Arapahoe, and Jefferson Counties); the data are compared with the United States. As indicated, drug reports identified as cocaine among seized and analyzed drug items were the most common among the top 10 drug reports from items analyzed in the Denver area, constituting about 1 in 4 (24.4 percent) of the total, compared with approximately 1 in 6 (at 15.4 percent) for the United States (where cocaine ranked second) (exhibit 6).

Most cocaine trends remained low in Denver. One treatment clinician stated that there is greater availability of prescription drugs and other drugs, and cocaine is expensive. The DEA stated that they have not seen changes in price and purity, but that the supply is tightening up in Mexico. In addition, methamphetamine is much cheaper. However, cocaine remained popular among street injection drug users (IDUs) for speedballs (cocaine and heroin injected at the same time—a common combination found in Denver drug mortality cases).

Heroin

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—heroin ranked third among statewide and second among Denver metropolitan area treatment admissions, fourth among statewide calls to the RMPDC, fifth among Colorado and Denver metropolitan hospital discharges, fifth among statewide and Denver metropolitan area ED visits, third among Colorado death mentions, second among Denver metropolitan death mentions, and fourth in drug reports among items seized and analyzed in Denver metropolitan area NFLIS laboratories. Overall, heroin indicator trends were mostly increasing.

From 2008 to 2013, the proportion of heroin primary treatment admissions (including alcohol) steadily increased, from 4.6 to 9.7 percent statewide and from 6.7 to 12.9 percent in the Denver area. Statewide heroin treatment admissions increased by almost 2.5 times from 2006 through 2013, and they slightly more than doubled in the Denver area (exhibits 2 and 3). The proportion of female admissions represented approximately one-third of the heroin treatment admissions over the past few years in both the State of Colorado and in the Denver area (exhibits 4 and 5).

Over the past 5 years, White treatment admissions gradually increased statewide, from 69.3 percent in 2007 to 75.7 percent in 2013. Statewide, the 2013 proportions of total admissions for Whites, Hispanics, and African-Americans, respectively, were 75.7, 18.0, and 3.0 percent. In Denver, in 2013, the proportions of White, Hispanic, and African-American admissions were 76.8, 15.8, and 3.8 percent, respectively.

In recent years, the proportion of younger heroin treatment clients has been on the rise statewide. From 2007 to 2013, the proportion of heroin users entering treatment who were younger than 18 increased from 0.3 to 1.9 percent, while the proportion of clients age 18–24 increased almost threefold (from 14.3 to 38.1 percent) (exhibit 4). There were similar findings in the Denver metropolitan area, with clients younger than 18 increasing from 0.1 to 2.0 percent, and clients age 18–24 increasing from 12.5 to 34.1 percent (exhibit 5). Heroin clients age 45 and older declined sharply both statewide and in the Denver metropolitan area from 2007 to 2013 (declining from 30.5 to 9.9 percent statewide and from 33.2 to 12.0 percent in the Denver area).

Heroin is a drug that is predominantly injected. However, statewide, the proportion of heroin treatment clients who were injectors declined from 82.3 percent in 2007 to 74.9 percent in 2013 (exhibit 4). The proportion of clients smoking heroin continued a multiyear increase, rising from 9.1 percent in 2007 to a new high of 20.0 percent in 2013. In 2013, 3.5 percent inhaled heroin statewide.

Denver area proportions were similar to statewide figures. The proportion of heroin treatment admissions injecting in Denver declined from 81.6 percent in 2007 to 72.3 percent in 2013 (exhibit 5). The proportion who smoked heroin gradually increased, from 9.5 percent in 2007 to a high of 21.4 percent in 2013. In 2013, 4.3 percent inhaled heroin in the Denver area (exhibit 5). Overall, treatment admissions data showed that heroin treatment admissions most often used cocaine as a secondary drug (4 and 5).

Although heroin was not among the most common drugs found in Denver metropolitan area drug deaths, it doubled from a rate of 1.3 per 100,000 population in 2007 to a rate of 2.6 per 100,000 in 2013. In a special drug mortality study with the Denver OME, in which drug-related deaths were

determined through examination of autopsy reports, heroin increased from 4.0 to 27.9 percent of Denver drug-related decedents from 2004 to 2012. The proportion declined somewhat to 25.0 percent in 2013. The reason for this discrepancy had to do with detection of 6-monoacetylmorphine (6-MAM) in the blood and/or urine toxicology of the deceased as part of the autopsy. Heroin is metabolized into 6-MAM then into morphine. Also, heroin typically contains codeine, because codeine naturally occurs in the opium poppy plant (from which heroin is produced). The 6-MAM needs to be present to confirm that heroin was related to the cause of death. However, this metabolite has a very short half-life and may be undetectable by the time blood work is done as part of an autopsy. This contrasts with morphine and codeine, which will very likely be present in the blood toxicology. Starting in 2008, the Denver OME began efforts to more definitively diagnose heroin mortality due to changes in the laboratory testing they use (i.e., looking for 6-MAM in urine). As a result, more heroin deaths were identified in 2008 ($n=27$), 2009 ($n=49$), 2010 ($n=35$), 2011 ($n=49$), 2012 ($n=41$), and 2013 ($n=36$) than in any year from 2003 through 2007 (heroin deaths ranged from $n=6$ to $n=18$ during this time period). Consequently, the number of morphine and codeine deaths has declined, especially in 2010 through 2013.

In the Denver metropolitan area, heroin has the lowest hospital discharge rate compared with other drugs, but it rose from 1.0 to 2.3 per 100,000 population from 2007 to 2013. The heroin discharge rate was highest among males age 18–25 and increased fivefold from a low rate of 2.6 per 100,000 in 2010 to a rate of 13.9 per 100,000 among this age group in 2012. The hospital discharge rate was also rising for both males and females age 26–34.

Heroin represents the lowest ED visits and rates per 100,000 population of all of the drugs examined in this report. However, the number of Denver metropolitan area heroin-involved ED visits rose from 154 to 201 between 2011 and 2012, with the rate increasing from 5.4 to 6.9 per 100,000.

Statewide, heroin/morphine human exposure calls to the RMPDC from 2004 through 2013 have mostly ranked behind those of alcohol, cocaine, marijuana, and methamphetamine. Such calls had also remained relatively stable from 2004 to 2010, with a peak of 29 calls in 2009 and a low point of 19 calls in 2010. However, in 2011, the number of heroin/morphine-related human exposure calls to the RMPDC increased by 2.5-fold, to 47, with a small increase to 50 calls in 2012; they remained relatively stable at 44 calls in 2013. The 2011, 2012, and 2013 heroin calls are the highest numbers of such calls in the 10-year time period.

As shown in exhibit 6 for 2013, drug reports identified as heroin among seized drug items analyzed in NFLIS laboratories were the fourth most common among the top 10 drug reports analyzed in the Denver area. Reports for heroin constituted 14.0 percent of the total, compared with 10.2 percent for the United States (where heroin also ranked fourth).

The discussion on the possible relationship between heroin and prescription drugs continued in the Denver area. A treatment clinician who provides methadone treatment stated that most people who come in for treatment of heroin addiction started on prescription drugs and switched to heroin. Another treatment provider stated that treatment percentages for methadone treatment may be down because more young people are willing to engage in treatment—and because they have not used heroin for too long, they are able to enter drug-free treatment. Another explanation may be that youth are receiving Suboxone® from a private physician and participating in drug-free treatment. It has been suggested that the medical community needs more education on the association between

prescription drugs and heroin use once patients no longer receive pain medication, and the State Consortium on Prescription Drugs is working on this issue.

The DEA reported that heroin comes in to Denver from Mexico, and Hondurans are selling it on the street, where it gets cut down with other substances by another 20 percent. The DEA stated that the recent purity was 27–30 percent, and this may be an explanation for an increase in hospital or ED admissions, as the heroin may be cut with other substances.

Other Opioids

The other opioids category excludes heroin and includes all other opiates/opioids, such as methadone, morphine, hydrocodone, hydromorphone, codeine, and oxycodone. Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—other opioids ranked fourth among statewide and fifth among Denver metropolitan area treatment admissions. Other opioids ranked second among Colorado and Denver metropolitan area hospital drug-related discharges, second among statewide and Denver metropolitan area ED visits, and first among Colorado and Denver metropolitan area death mentions. Oxycodone and hydrocodone ranked among the top 10 reports of drugs detected in seized items analyzed by NFLIS laboratories. Other opioid indicators had mixed ranks, with mostly stable trends over the last 3 years.

During 2013, other opioids were reported as primary drugs in 7.0 percent of statewide treatment admissions; this was the same as in 2012, but it was an increase from only 2.7 percent in 2005 (including alcohol) (exhibit 2). Overall from 2005 through 2013, other opioid admissions tripled. In Denver, other opioids constituted between 3.9 and 6.5 percent of all treatment admissions (including alcohol) from 2008 to 2013. The proportion of other opioid primary treatment admissions in the Denver metropolitan area remained stable from 2011 to 2013 (at 6.3 percent). Denver metropolitan other opioid treatment admissions nearly doubled from 2005 to 2013 (exhibit 3).

Treatment admissions related to nonheroin opiates/opioids in Denver and in the State of Colorado have always represented higher proportions of females than the other four major illicit drugs. Statewide, females constituted 49.1 percent of these admissions in 2013, while males constituted 50.9 percent (exhibit 4). In Denver, females accounted for 51.1 percent of other opioid admissions in 2013 (exhibit 5).

Statewide and in Denver, Whites accounted for the largest proportion of primary treatment admissions related to other opioids. However, the proportion of Whites has been on the decline in recent years; they represented a new low of 70.4 percent in 2013 (down from 84.7 percent in 2007) (exhibit 4). African-American treatment admissions for other opioids have remained stable in recent years, at approximately 2 percent. The proportion of Hispanic other opioid admissions in Colorado has increased steadily and reached a high of 24.8 percent in 2013 (they constituted 12.4 percent of all admissions in 2007).

In the Denver metropolitan area, the proportion of White other opioid admissions declined from 85.5 to 75.1 percent from 2007 to 2013 (exhibit 5). In 2013, African-Americans represented 3.3 percent of admissions; this proportion was slightly higher than the 2.1 percent in 2007. However, the moderate change in proportion is influenced by the small numbers of African-American other opioid admissions. Hispanic admissions in the Denver area doubled from 10.5 to 20.0 percent of other opioid admissions from 2007 to 2013.

Younger users are increasing statewide among other opioid admissions, especially clients age 18–24 (increasing from 14.3 to 23.2 percent from 2007 to 2013) and clients age 25–34 (increasing from 34.3 to 42.5 percent during the same time period). This same pattern was also noted in the Denver area, although not as dramatically. From 2007 to 2013, the proportion of clients age 18–24 increased from 11.9 to 16.1 percent, while clients age 25–34 increased from 35.0 to 45.1 percent.

Nonheroin opioids were most often taken orally. Statewide, in 2013, 66.4 percent of admissions for other opioids ingested the drugs orally, and 11.4 and 12.3 percent, respectively, inhaled and injected the drugs (exhibit 4). The proportion of clients inhaling the drugs increased from 4.6 percent in 2007 to 11.4 percent in 2013. The proportion injecting increased from 7.3 to 12.3 percent during the same time period.

Denver's proportions for preferred route of administration for other opioids were similar to statewide figures. The proportion of other opioid admissions ingesting the drugs orally represented 76.6 percent in 2013 (exhibit 5). The 2013 proportions of clients who inhaled and injected were 8.9 and 7.4 percent, respectively. Injection of other opioids in Denver has remained fairly stable since 2007 (7.2 percent); however, the proportion dropped slightly in 2012 (to 6.4 percent). Inhalation in the Denver area reached a high of 13.9 percent in 2010, but it declined to 8.9 percent in 2013. Treatment data, overall, showed that other opioid users most often used marijuana and alcohol as secondary and tertiary drugs (exhibits 4 and 5).

Other opioids ranked second in Denver metropolitan substance abuse-related hospital discharges, excluding alcohol, in 2007 (behind cocaine), but from 2008 through 2012 they ranked first. They dropped back to second (behind marijuana) in 2013. The number of prescription opioid discharges increased by 75.5 percent from 2,301 in 2007 to 4,038 in 2013, with the rate increasing from 85.7 to 136.3 per 100,000 population during the same time period (an increase of 59 percent). Other opioids were also the most common type of drug mortality (excluding alcohol) in the Denver metropolitan area from 2007 through 2013, with the number and rate of deaths declining slightly from 506 (18.9 per 100,000) in 2007 to 479 (16.2 per 100,000) in 2013.

In the special drug mortality study with the Denver OME, in which drug-related deaths were determined through examination of autopsy reports, prescription opioids accounted for an increasing trend as a proportion of total alcohol and drug deaths from 2003 through 2013. In 2003, prescription opioids totaled 30 of 139 alcohol and drug deaths (21.6 percent). However, from 2007 through 2013, prescription opioids constituted 39.2, 37.7, 41.1, 37.5, 44.2, 48.3, and 34.7 percent of alcohol and drug deaths, respectively.

Prescription opioids accounted for the third most common drug in ED visits in the Denver metropolitan area in 2011 and 2012, with the number of visits increasing from 3,161 to 3,526 (or by 11.5 percent). The rate also increased from 110.5 to 121.1 per 100,000 population.

Based on data from the Colorado PDMP, the number and rate of oxycodone prescriptions filled for Denver residents increased over the past several years. Oxycodone increased fairly steadily from 47.6 to 66.7 prescriptions per 1,000 population from the third quarter of 2007 to the fourth quarter of 2013. Hydrocodone prescriptions filled for Denver residents increased from 68.6 per 1,000 in the third quarter of 2007 to a high of 81.1 per 1,000 in the first quarter of 2011, but they then declined back to 69.0 per 1,000 by the fourth quarter of 2013.

Drug reports among items seized and analyzed by NFLIS laboratories in the Denver area that were identified as containing oxycodone (2.1 percent of all reports) and hydrocodone (0.9 percent of all reports) were among the top 10 drug reports in 2013 in Arapahoe, Denver, and Jefferson Counties (exhibit 6).

The most recent combined 2010 and 2011 NSDUH data indicated that the rate of past-year non-medical use of prescription pain relievers among individuals age 12 or older in Colorado was in the top fifth quintile and ranked second in the country, at 6.0 percent; this was higher than the national proportion of 4.6 percent.

Public health specialists stated that it was very easy to access prescription drugs. Family and friends are the most likely first source of prescription drugs. The DEA examined (unscientifically) how many opioid deaths received drugs from a prescriber, and found it difficult to find an original prescriber. The DEA stated that a lot of the traffic on the Internet has quieted down because of new rules (excluding Silk Road, an online marketplace). A U.S. Attorney stated that it is very difficult to track drugs on Silk Road because of the bitcoin system, and many drugs are available through this Web site. Treatment clinicians were reporting an association between prescription drugs and heroin, with many patients starting with prescription drugs and then switching to heroin.

Benzodiazepines

Benzodiazepines are a class of psychoactive drugs with varying sedative, hypnotic, and antianxiety (i.e., anxiolytic) properties. Most common are the benzodiazepine tranquilizers (diazepam, alprazolam, lorazepam, and clonazepam). Benzodiazepines presented a “mixed picture” in the Denver metropolitan area drug scene in 2013. This drug category is not shown as a separate drug category on exhibits 2 or 3. Benzodiazepines have been somewhat infrequent among Colorado treatment admissions; there were 127 statewide benzodiazepine admissions in 2013, constituting 0.4 percent of all drug admissions, including alcohol. Denver metropolitan benzodiazepine admissions have also been somewhat infrequent; there were 56 Denver metropolitan benzodiazepine admissions in 2013, constituting 0.5 percent of all drug admissions, including alcohol.

In the special drug mortality study with the Denver OME, in which drug-related deaths were determined through examination of autopsy reports, benzodiazepines accounted for an increasing trend as a proportion of total alcohol and drug deaths from 2003 through 2013. In 2003, benzodiazepines totaled 15 of 139 alcohol and drug deaths (10.8 percent). However, from 2008 through 2013, benzodiazepines constituted 19.3, 32.9, 19.1, 24.7, 21.8, and 23.1 percent of alcohol and drug deaths, respectively.

PDMP data showed overall increases in the rate of lorazepam, alprazolam, and diazepam prescriptions filled for Denver residents from the third quarter of 2007 through the fourth quarter of 2013. As indicated, among the three benzodiazepines, lorazepam had the highest rate of prescriptions filled for Denver residents for the entire time period mentioned, increasing from 17.9 to 23.3 per 1,000 population, followed by alprazolam, increasing from 15.4 to 23.5 per 1,000. Diazepam was third, increasing from 10.2 to 13.4 per 1,000. Alprazolam accounted for 1.2 percent of the drug reports among items seized and analyzed by NFLIS laboratories in 2013 in the Denver area, compared with 2.4 percent in the Nation.

Local clinicians stated that benzodiazepines are popular with people using opiates/opioids because of the high it creates when taken together (thought to “stretch the effects of heroin”). Some opiate/opioid addicts may use benzodiazepines to manage the effects of opiate/opioid withdrawal (e.g., a Denver detoxification manager reported a number of heroin-using clients self-admitting to detoxification seeking benzodiazepine medication when they are unable to get heroin). However, the synergistic effects of opiates/opioids and benzodiazepines (often in combination with alcohol as well) can be lethal. The OME reported that benzodiazepine-related deaths usually include a mix of benzodiazepines and opiates/opioids.

Methamphetamine

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—methamphetamine ranked second among statewide and third among Denver metropolitan area treatment admissions. Methamphetamine ranked second among statewide calls to the RMPDC, fourth among statewide and third among Denver metropolitan area death mentions, third among Colorado and fourth among Denver metropolitan area drug-related hospital discharges, third among Colorado and fourth among Denver metropolitan ED visits, and second in the proportion of drug reports among drug items seized and analyzed in Denver metropolitan area NFLIS laboratories. Most methamphetamine indicators displayed increasing trends.

In 2013, methamphetamine was the primary drug reported for 17.2 percent of all treatment admissions (including alcohol) statewide (exhibit 2); this is the highest proportion since 2007. Historically, primary methamphetamine admissions have remained second to marijuana admissions. In the Denver metropolitan area, methamphetamine represented a lower proportion of treatment admissions (12.4 percent in 2013) than it did among statewide admissions (exhibit 3). The proportion of methamphetamine admissions (including alcohol) in Denver decreased from a high of 13.8 percent in 2005 to a low of 11.1 percent in 2011, but it climbed to 11.5 percent in 2012 and to 12.4 percent in 2013, the highest percentage since 2008.

After admissions for nonheroin opioids and sedatives, methamphetamine admissions had the highest proportion of female admissions statewide (46.1 percent) in 2013 (exhibit 4). In the Denver area, the proportion of female methamphetamine admissions represented 39.0 percent of all admissions in 2013 (exhibit 5). These percentages were relatively stable from 2007 to 2013. In 2013, methamphetamine admissions in Colorado and Denver were predominately White (exhibits 4 and 5). From 2007 to 2013, the proportion of White treatment admissions declined, from 79.7 to 71.3 percent statewide and from 79.3 to 75.1 percent in the Denver area. During the same time period, the proportion of Hispanic methamphetamine admissions increased, from 15.9 to 22.3 percent statewide and from 14.8 to 18.7 percent in Denver.

Compared with cocaine, methamphetamine admissions tended to be younger both statewide and in Denver (exhibits 4 and 5). However, from 2007 to 2013, statewide methamphetamine admissions decreased in the 18–24 age group (23.0 to 15.9 percent), while admissions for the 45–54 age group increased from 8.3 to 12.4 percent. This same pattern was evident in the Denver metropolitan area for the same time period, when the 18–24 age group among methamphetamine admissions declined from 18.4 to 13.1 percent, while the 45–54 age group increased from 8.1 to 13.6 percent.

In 2013, the proportions of clients statewide who smoked, injected, or inhaled methamphetamine were 61.5, 29.9, and 6.3 percent, respectively (exhibit 4). The proportion who smoked decreased from 2007 (65.3 percent) to 2013 (61.5 percent), while the proportion who inhaled also decreased during that time, from 11.6 percent in 2007 to 6.3 percent in 2013. Injectors increased statewide from 20.3 percent in 2007 to 29.9 percent in 2013. In 2013, in the Denver area, the proportions of treatment admissions who smoked, injected, or inhaled methamphetamine were 59.4, 30.2, and 7.2 percent, respectively (exhibit 5). The proportion who smoked remained fairly stable from 2007 (61.8 percent) to 2013 (59.4 percent). The proportion of inhalers declined from 14.9 to 7.2 percent from 2007 to 2013. However, the proportion of methamphetamine injectors increased from 19.9 to 30.2 percent from 2007 to 2013. Treatment data, overall, showed that methamphetamine clients most often used marijuana as a secondary drug, followed by alcohol (exhibits 4 and 5).

Methamphetamine could not be identified separately, but rather it was included in the stimulants category in Denver metropolitan drug-related hospital discharge data. Stimulants ranked fourth (behind marijuana, other opiates/opioids, and cocaine) in the Denver metropolitan area drug-related hospital discharges, excluding alcohol, and the category increased from 31.1 per 100,000 population in 2007 ($n=836$) to 45.9 per 100,000 in 2013 ($n=1,359$).

Similarly, methamphetamine could not be identified separately in ED data, but rather it was included in the stimulants category. ED visits related to stimulant use rose in the Denver metropolitan area between 2011 and 2012 from 1,506 to 1,833 visits, or by 21.7 percent. Likewise, the Denver metropolitan ED stimulant rate rose from 52.6 to 63.0 per 100,000 population. Methamphetamine-involved ED visits rates in 2012 in the Denver metropolitan area were highest among males and those 26–34 years old.

Stimulants (mostly methamphetamine) were the fifth most common drug category in Denver metropolitan area drug-related deaths (excluding alcohol) from 2007 to 2010 (after other opioids, cocaine, heroin, and benzodiazepines), with a rate ranging from 0.34 to 0.48 per 100,000 population. In 2011, stimulants in the Denver metropolitan area tied for fourth in rank with benzodiazepines (with both at 0.52 per 100,000) behind other opioids, cocaine, and heroin. In 2012, stimulants ranked fourth (0.53 per 100,000) in Denver metropolitan area drug related deaths behind other opioids, cocaine, and heroin.

In the special drug mortality study with the Denver OME, in which drug-related deaths were determined through examination of autopsy reports, methamphetamines increased as a proportion of total alcohol and drug deaths from 2003 through 2013, from only 7 deaths (4.6 percent of total) in 2003 to 32 deaths (22.2 percent of total) in 2013. The 32 methamphetamine deaths in 2013 totaled 12 more than the previous high of 20 methamphetamine deaths in 2011. Also, from 2003 to 2012, cocaine and heroin in combination accounted for an average of 11.3 deaths per year. However, in 2013, there was only one heroin and cocaine combination death (the combination termed a “speedball”), while there were nine heroin and methamphetamine combination deaths in 2013 (termed a “goofball”).

Methamphetamine was second after cocaine (excluding alcohol calls) in the number of statewide drug-related calls to the RMPDC in 2004 and first in 2005. From 2006 through 2008, methamphetamine ranked third after cocaine and marijuana. It ranked second after cocaine in 2009, second after marijuana in 2010, third after marijuana and cocaine in 2011, and second after marijuana in 2012 and 2013.

The proportion of drug reports among items seized and identified by NFLIS laboratories as containing methamphetamine accounted for 21.1 percent of all reports in the Denver area in 2013. Methamphetamine ranked third among the top 10 drug reports among items analyzed in 2013 in the Denver area, compared with 14.6 percent (also ranking third) across the Nation (exhibit 6).

The DEA reported that most of the methamphetamine in Colorado is produced and supplied by Mexican drug trafficking organizations and comes from large laboratories in Mexico (“super laboratories” that are controlled by a handful of organizations). The DEA also reported that methamphetamine availability has been both high and stable over the last few years with purity reported as very high (recent samples were analyzed at almost 100 percent purity); this may explain recent increases in methamphetamine indicators.

Marijuana

Of the five major drugs—cocaine, heroin, marijuana, methamphetamine, and other opioids—marijuana ranked first among both statewide and Denver metropolitan area treatment admissions, first among statewide calls to the RMPDC, first among Colorado and Denver metropolitan area drug-related hospital discharges, first among Colorado and Denver metropolitan area ED visits, and third in the proportion of drug reports among items seized and analyzed by Denver metropolitan area NFLIS laboratories. Marijuana indicators ranked high and it remained a major substance of abuse, but there were some mixed trends.

Statewide, the percentage of marijuana treatment admissions (including alcohol) decreased slightly, from 22.0 percent in 2010 to 18.1 percent in 2013 (exhibit 2). This is the lowest percentage for marijuana for the 2005–2013 time period. In the Denver area, the proportion of marijuana admissions decreased overall, from 24.9 percent in 2005 to 18.1 percent in 2013 (exhibit 3). Historically, marijuana admissions have represented the highest proportion of males among drug groups. In 2013, 77.2 percent of marijuana admissions statewide and 79.9 percent in Denver were male (exhibits 4 and 5).

In 2013, Whites, Hispanics, and African-Americans represented 51.9, 31.1, and 13.2 percent of marijuana admissions, respectively, statewide (exhibit 4). The proportion of White admissions has remained fairly stable in recent years: 51.7 percent in 2007 and 51.9 percent in 2013. Similarly, the statewide proportion of African-American marijuana admissions has remained stable at 13.7 percent in 2007 and 13.2 percent in 2013. Also, the proportion of Hispanics among statewide admissions remained relatively stable from 2007 (30.3 percent) to 2013 (31.1 percent).

In Denver, White marijuana admissions remained fairly stable from 2007 (43.1 percent) to 2013 (44.2 percent). In 2013, the proportion of African-American admissions was 18.3 percent; this represented a slight decrease from 20.2 percent in 2007 (exhibit 5). The proportion of Hispanic marijuana admissions in the Denver metropolitan area remained fairly stable from 2007 to 2013 (32.5 to 33.3 percent).

In both Colorado and the Denver metropolitan area, marijuana clients were typically the youngest of the treatment admissions groups. Slightly less than one-quarter (23.2 percent) of marijuana admissions statewide and 26.7 percent of Denver area admissions were younger than 18. Statewide, marijuana admissions younger than 17 declined from 29.0 to 23.2 percent from 2007 to 2013. Treatment data, overall, showed that marijuana users most often used alcohol as a secondary or tertiary drug (exhibits 4 and 5).

Excluding alcohol, marijuana ranked third in Denver metropolitan drug-related hospital discharges in 2007, behind cocaine and prescription opioids, and it ranked second from 2008 through 2012 (behind prescription opioids). Overall, marijuana hospital discharges increased from 2,091 to 3,558 from 2007 to 2012, with the rate per 100,000 population increasing from 77.9 to 122.2. Marijuana ranked third in the number of State drug-related calls to the RMPDC in 2004 and 2005 (excluding alcohol), second from 2006 through 2008 (behind cocaine), third in 2009 (behind cocaine and methamphetamine), and first from 2010 to 2013. Marijuana calls to the RMPDC ranged from 45 to 78 calls from 2004 through 2009, but they ranged from 98 to 136 from 2010 through 2013.

Excluding alcohol, marijuana was the most common drug as a proportion of the Denver metropolitan area substance abuse-involved ED visits in both 2011 (4,375 visits, at a rate of 152.9 per 100,000 population) and 2012 (5,131 visits, at a rate of 176.2 per 100,000). The rate of marijuana-involved ED visits for the city and county of Denver was almost two times higher than the rate for the Denver metropolitan area and for Colorado. Rates for the Denver metropolitan area and Denver County were highest among males age 18–25, with the rate in the Denver metropolitan area rising from 534.2 in 2010 to 593.9 per 100,000 population in 2011 (an 11-percent increase); in Denver County, the rate for this group increased from 865.9 per 100,000 in 2010 to 1,012.6 per 100,000 in 2011 (a 17-percent increase).

In the special drug mortality study with the Denver OME in which drug-related deaths were determined through examination of autopsy reports, marijuana was never listed as an underlying cause of death either alone or in combination with other drugs from 2003 through 2013. (A synthetic cannabinoid was listed as the sole cause of death for one individual in 2013—see synthetic cannabinoid discussion below.) However, in 2011, 2012, and 2013, researchers enumerated the number of times marijuana/cannabis was listed as present in the blood toxicology with the following results: 11 of 190 deaths in 2011 (5.8 percent); 27 of 147 deaths in 2012 (18.4 percent); and 15 of 144 deaths in 2013 (10.4 percent).

Among the Denver area reports from drug items seized and analyzed by NFLIS laboratories, the proportion identified as marijuana/cannabis ranked third as a proportion of all drug reports, at 15.4 percent; this is compared with 31.4 percent for the United States, where it ranked first (exhibit 6).

Combined 2010 and 2011 NSDUH data indicated that Colorado ranked in the top fifth quintile for the following data: marijuana use in the past year among people age 12 or older, youth age 12–17, people age 18–25, and people age 26 or older; marijuana use in the past month among people age 12 or older, youth age 12–17, people age 18–25, and people age 26 and older; and first use of marijuana among people age 12 or older, youth age 12–17, and people age 18–25. In addition, substance use epidemiology has documented that the lower the perception that use involves risk, the higher the probability of use. Colorado was among five States with the lowest proportions of individuals who perceived smoking marijuana once a month as a great risk; this is evident for all age groups, including people age 12 or older, youth age 12–17, people age 18–25, and people age 26 and older.

The DEA reported that all offices within the Denver Field Division reported marijuana availability as high during this reporting period. Marijuana is widely available throughout Colorado. There has been a notable increase in both the demand for and supply of high-potency, domestically produced marijuana. In Colorado, marijuana is widely grown indoors, due in large part to State law allowing the use of marijuana for medical purposes and legalizing recreational use. A substantial amount of Colorado-produced marijuana is trafficked to out-of-State markets.

The large influx of medical marijuana dispensaries appeared to be contributing to the availability and acceptability of marijuana use, based on qualitative data. For example, Denver area adolescent treatment providers reported caregivers, older peers, or family members of clients often have medical marijuana licenses, so more individuals have more accessibility. The Denver Police Department continued to report that they have found medical marijuana in schools and in the hands of people who were not medical marijuana patients. They have found different forms of medical marijuana, such as marijuana candies. Most people do not realize the high potency of medical marijuana and the effects different strains can produce, which may lead to more adverse reactions. There are warehouses dedicated to producing medical marijuana in and around the Denver area. For example, in 2011, the DEA reported there were cases of 1 million square footage of space rented out to marijuana growers; depending on the size, that may only represent 20 to 30 growers.

Based on the “Proceedings of the DEWG,” Denver street outreach workers and clinicians described a Denver scene in which medical marijuana dispensaries have made marijuana more available with less stigma and with a lowered perceived risk. Another Denver area clinician reported that increasingly more adults in treatment are using marijuana as a secondary or supplemental drug. “Coming down through pot” is not uncommon, often with opiates. The increase in potency of marijuana is changing how it is used also. Previously, clients would smoke all day, but now they only smoke once a day and can get the same effect.

MDMA

Morbidity and mortality for MDMA (3,4-methylenedioxymethamphetamine), or ecstasy, remained relatively low in Denver in 2013. Although the numbers of MDMA and other “club drug” treatment admissions (including Rohypnol®, ketamine, GHB [gamma hydroxybutyrate], and MDMA) were relatively small, they have been on the rise over recent years. Of the 137 statewide “club drug” treatment admissions shown in 2013 (exhibit 2), which represented 0.4 percent of total admissions, 134 were for MDMA. In the Denver metropolitan area, “club drugs” accounted for 69 treatment admissions in 2013 (0.5 percent of total admissions) (exhibit 3). All of these admissions were for MDMA.

From 2001 through 2004, MDMA exhibits analyzed by the Denver Police Department Crime Laboratory (DCL) were mostly pure MDMA. However, from 2005 through 2012, MDMA analyzed by the DCL was adulterated with many drugs other than MDMA (e.g., methamphetamine, cocaine, cathinones, or BZP [1-benzylpiperazine]). Specifically, MDMA substitutes constituted 37 to 53 percent of what was supposedly pure MDMA from 2005 to 2012. In 2013, the DCL analyzed only 28 MDMA exhibits, of which 79 percent were pure MDMA.

MDMA in powdered form sold for \$1,000 to \$1,600 per ounce. MDMA tablets sold for \$8–\$25 per dosage unit (e.g., a tablet). Users can get lower price “deals” for higher quantity purchases. Undercover officers were encountering powdered MDMA in gel caps called “Mollies” that were approximately 0.2 grams and sold for \$15 per dosage unit.

Emerging Synthetic Drugs

Synthetic Cannabinoids

In August 2013, Denver Public Health tracked illness and hospitalizations of people who smoked synthetic marijuana. During this time, approximately 100 cases were reported in Denver EDs, and

approximately 250 cases were reported across Colorado EDs. Paramedics described patients as having “excited delirium.” These events have been in conjunction with increasing concern among law enforcement, treatment, and street outreach personnel about the availability and use of synthetic cannabinoids, including a variety of compounds with street names such as “Spice,” “K2,” and “Black Mamba.”

Data from DAWN in the Denver metropolitan area indicate there was no mention of synthetic cannabinoids in the participating EDs from 2004 through 2009. However, they started to appear in 2010 with 76 visits (a rate of 3 per 100,000 population) and in 2011 with 149 visits (a rate of 5.7 per 100,000). These are minor numbers compared with “regular” marijuana, but it was the first time synthetic cannabinoids had been seen in any of the institutional data sources. Likewise, data through NFLIS indicated there were only 16 synthetic cannabinoid reports in 2011 in the Denver metropolitan area, but this increased to 271 in 2012. In addition, the DCL had not analyzed synthetic cannabinoid exhibits from 2000 through 2009. However, there were 4 exhibits analyzed in 2010, 9 in 2011, 84 in 2012, and 274 in 2013.

In the special drug mortality study with the Denver OME in which drug-related deaths were determined through examination of autopsy reports, a synthetic cannabinoid (XLR-11—a potent agonist for specific cannabinoid receptors) was listed as the sole cause of death for one adolescent individual.

Synthetic Cathinones

A class of drugs recently appearing in the Denver metropolitan area and in Colorado are synthetic stimulants marketed as “bath salts” with names such as “Cloud Nine,” “Vanilla Sky,” “Bliss,” and “White Dove.” These stimulants have effects similar to methamphetamine and ecstasy, and they include mephedrone, methylone, and MDPV (3,4-methylenedioxypyrovalerone).

The DCL analyzed 15 “bath salt” exhibits (e.g., the synthetic cathinones butylone, methylone, MDPV, and various combinations) among the total samples analyzed in 2011, 41 exhibits were analyzed in 2012, and 9 in 2013. However, these drugs do not typically appear in any other institutional data sets at this point, with the exception of the RMPDC. According to the RMPDC, based on data from January through April 2011, there were nine exposures to synthetic cathinones (eight males and one female). These synthetic cathinone users reported 21 different symptoms, including slurred speech, seizures, hypertension, excessive sweating, acidosis, chest pain, confusion, agitation and irritability, and tachycardia.

Although synthetic cathinones are not included in the treatment data set, one Denver area treatment program reported an increase in their use, mainly among males in their late twenties to early thirties (and actually had one client who had injected synthetic cathinones).

The National Institute on Drug Abuse’s Community Epidemiology Work Group considers these synthetic cathinones to be an emerging threat (including MDPV, mephedrone, methylone, 4-FMC—4-fluoromethcathinone, and 3-FMC—3-fluoromethcathinone). This class of drugs has been reported in Europe since 2007, with horrific stories of psychotic episodes. Most information on the effects and consequences of this class of drugs is anecdotal. The DEWG will continue to monitor these drugs to try and determine their effects within the Denver metropolitan area.

INFECTIOUS DISEASES RELATED TO DRUG ABUSE

HIV/AIDS and Injection Drug Use

Of the 1,886 newly diagnosed HIV cases reported in Colorado through 2009–2013, 3.6 percent were classified as injection drug users (IDUs), and another 5.2 percent were classified as men who have sex with men (MSM) and IDUs. The proportion of newly diagnosed HIV cases attributed to injection drug use fluctuated between 3 and 5 percent over the last several years. In 2013, 3.6 percent of newly diagnosed HIV cases were attributed to injection drug use (exhibit 7). As of December 2013, there were 5,740 persons living with AIDS in Colorado. Of these, 8.3 percent were classified as IDUs, and 9.0 percent were classified as MSM and IDUs.

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**Exhibit 1. Members Participating in the Ninth Meeting of the Denver Epidemiology Work Group:
Convened on April 18, 2014**

Adam Doyle	DEA
Alia Al-Tayyib	Denver Public Health
Audrey Vincent	Denver Health
Barbara Gabella	CO Dept of Public Health
Becky Helfand	OBH
Benjamin Temple	VA/CU Anschutz
Bruce Mendelson	Denver Office of Drug Strategy
Devi Grieser	Arapahoe House
Don Shriver	Denver Police Department
James Henning	Denver Police Department
Jim Caruso	Office of Medical Examiner
Jonathan Gray	Arapahoe/Douglas Mental Health
Kathleen Shoaf	Arapahoe House
Katie Page	OMNI Institute
Kent MacLennan	Rise Above Colorado
Kim Meltzer	Arapahoe House
Kristen Dixon	ARTS
Laura Pegram	Drug Policy Alliance
Laurie Lovedale	Peer Assistance Services
Lindsey Breslin	Denver Office of Drug Strategy
Lisa Raville	HRAC
M.J. Menendez	US Attorney's Office
Margaret Everett	DEA
Matt Groves	Peer Assistance Services
Meredith Silverstein	Arapahoe House
Michelle Deland	Arapahoe House
Mike Van Dyke	CDPHE
Missi Wooldridge	DanceSafe
Nachson Zohari	Denver Office of Drug Strategy
Ron Gowins	ARTS - Westside
Tarik Walker	HRAC
Todd Bunker	Arapahoe House
Adam Doyle	DEA
Alia Al-Tayyib	Denver Public Health

Exhibit 2. Number and Percentage of Treatment Admissions, by Primary Drug Type, State of Colorado: 2005–2013

Drug		2005	2006	2007	2008	2009	2010	2011	2012	2013
Alcohol	<i>n</i>	10,189	11,481	11,294	12,806	13,264	12,688	12,706	13,968	12,569
	%	38.8	40.9	39.5	40.7	42.1	41.7	41.3	41.7	40.4
Marijuana	<i>n</i>	5,568	5,653	6,016	6,798	6,875	6,693	6,339	6,390	5,651
	%	21.2	20.1	21.0	21.6	21.8	22.0	20.6	19.1	18.1
	(excluding alcohol) %	34.7	34.0	34.8	36.4	37.6	37.8	35.2	32.8	30.4
Methamphetamine	<i>n</i>	5,084	5,053	5,115	4,945	4,554	4,446	4,363	4,977	5,357
	%	19.4	18.0	17.9	15.7	14.4	14.6	14.2	14.9	17.2
	(excluding alcohol) %	31.7	30.4	29.6	26.5	24.9	25.1	24.2	25.5	28.8
Cocaine	<i>n</i>	2,929	3,476	3,464	3,690	3,032	2,517	2,374	2,277	1,683
	%	11.2	12.4	12.1	11.7	9.6	8.3	7.7	6.8	5.4
	(excluding alcohol) %	18.3	20.9	20.0	19.8	16.6	14.2	13.2	11.7	9.1
Heroin	<i>n</i>	1,421	1,271	1,280	1,434	1,709	1,780	2,208	2,707	3,015
	%	5.4	4.5	4.5	4.6	5.4	5.9	7.2	8.1	9.7
	(excluding alcohol) %	8.9	7.6	7.4	7.7	9.4	10.1	12.2	13.9	16.2
Other Opioids ¹	<i>n</i>	713	824	1,005	1,278	1,562	1,757	1,934	2,356	2,189
	%	2.7	2.9	3.5	4.1	5.0	5.8	6.3	7.0	7.0
	(excluding alcohol) %	4.4	5.0	5.8	6.8	8.6	9.9	10.7	12.1	11.6
Depressants ²	<i>n</i>	97	121	130	154	155	123	143	177	167
	%	0.4	0.4	0.5	0.5	0.5	0.4	0.5	0.5	0.5
	(excluding alcohol) %	0.6	0.7	0.8	0.8	0.8	0.7	0.8	0.9	0.9
Other Amphetamines/ Stimulants	<i>n</i>	57	52	38	60	49	57	73	70	69
	%	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2
	(excluding alcohol) %	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.4	0.4
Hallucinogens ³	<i>n</i>	33	35	33	41	36	28	50	61	51
	%	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2
	(excluding alcohol) %	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3
"Club Drugs" ⁴	<i>n</i>	50	47	63	79	79	113	183	146	137
	%	0.2	0.2	0.2	0.3	0.3	0.4	.06	0.4	0.4
	(excluding alcohol) %	0.3	0.3	0.4	0.4	0.4	0.6	1.0	0.7	0.7
Other ⁵	<i>n</i>	92	88	155	195	210	197	359	347	250
	%	0.4	0.3	0.5	0.6	0.7	0.6	1.2	1.0	0.8
	(excluding alcohol) %	0.6	0.5	0.9	1.0	1.1	1.1	2.0	1.8	1.3
Total	<i>N</i>	26,233	28,101	28,593	31,480	31,525	30,399	30,732	33,476	31,138
(excluding alcohol)	<i>N</i>	16,044	16,620	17,299	18,674	18,261	17,711	18,026	19,508	18,569

¹Includes nonprescription methadone and other opiates and synthetic opiates.²Includes barbiturates, benzodiazepine tranquilizers, clonazepam, and other sedatives.³Includes LSD (lysergic acid diethylamide), PCP (phencyclidine), and other hallucinogens.⁴Includes Rohypnol®, ketamine (Special K), GHB (gamma hydroxybutyrate), and MDMA (ecstasy).⁵Includes inhalants, over-the-counter, and other drugs not specified.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

Exhibit 3. Number and Percentage of Treatment Admissions, by Primary Drug Type, Denver/Boulder Metropolitan Area: 2005–2013

Drug		2005	2006	2007	2008	2009	2010	2011	2012	2013
Alcohol	<i>n</i>	3,575	4,408	4,449	5,091	5,266	4,967	5,085	5,654	5,342
	%	33.1	36.0	35.7	37.0	38.1	37.3	38.2	39.5	41.0
Marijuana	<i>n</i>	2,695	2,901	2,928	3,295	3,289	3,228	2,886	2,846	2,364
	%	24.9	23.7	23.5	23.9	23.8	24.2	21.7	19.9	18.1
(excluding alcohol)	%	37.2	37.0	36.6	38.0	38.4	38.7	35.0	32.9	30.7
Methamphetamine	<i>n</i>	1,494	1,696	1,722	1,714	1,640	1,562	1,474	1,644	1,617
	%	13.8	13.8	13.8	12.4	11.9	11.7	11.1	11.5	12.4
(excluding alcohol)	%	20.6	21.6	21.5	19.7	19.1	18.7	17.9	19.0	21.0
Cocaine	<i>n</i>	1,460	1,849	1,862	1,910	1,602	1,354	1,275	1,239	805
	%	13.5	15.1	15.0	13.9	11.6	10.2	9.6	8.7	8.9
(excluding alcohol)	%	20.2	23.6	23.3	22.0	18.7	16.2	15.5	14.3	10.5
Heroin	<i>n</i>	1,007	810	846	925	1,061	1,149	1,352	1,581	1,676
	%	9.3	6.6	6.8	6.7	7.8	8.6	10.2	11.1	12.9
(excluding alcohol)	%	13.9	10.3	10.6	10.7	12.4	13.8	16.4	18.3	21.8
Other Opioids ¹	<i>n</i>	434	412	429	570	684	783	834	928	816
	%	4.0	3.4	3.4	4.1	4.9	5.9	6.3	6.5	6.3
(excluding alcohol)	%	6.0	5.3	5.4	6.6	8.0	9.4	10.1	10.7	10.6
Depressants ²	<i>n</i>	45	57	50	68	63	44	66	77	70
	%	0.4	0.5	0.4	0.5	0.5	0.3	.05	0.5	0.5
(excluding alcohol)	%	0.6	0.7	0.6	0.8	0.7	0.5	0.8	0.9	0.9
Other Amphetamines/ Stimulants	<i>n</i>	21	34	17	29	22	31	32	33	18
	%	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.1
(excluding alcohol)	%	0.3	0.4	0.2	0.3	0.3	0.4	0.4	0.4	0.2
Hallucinogens ³	<i>n</i>	17	25	18	18	15	9	22	34	28
	%	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2
(excluding alcohol)	%	0.2	0.3	0.2	0.2	0.2	0.1	0.3	0.4	0.4
“Club Drugs” ⁴	<i>n</i>	24	24	42	53	43	63	83	74	69
	%	0.2	0.2	0.3	0.4	0.3	0.5	0.6	0.5	0.5
(excluding alcohol)	%	0.3	0.3	0.5	0.6	0.5	0.8	1.0	0.9	0.9
Other ⁵	<i>n</i>	40	37	82	97	152	122	210	196	145
	%	0.4	0.3	0.7	0.7	1.1	0.9	1.6	1.4	1.1
(excluding alcohol)	%	0.6	0.5	1.0	1.1	1.8	1.5	2.6	2.3	1.9
Total	<i>N</i>	10,812	12,253	12,445	13,770	13,837	13,312	13,319	14,306	13,040
(excluding alcohol)	<i>N</i>	7,237	7,845	7,996	8,679	8,571	8,345	8,234	8,652	7,698

¹Includes nonprescription methadone and other opiates and synthetic opiates.²Includes barbiturates, benzodiazepine tranquilizers, clonazepam, and other sedatives.³Includes LSD (lysergic acid diethylamide), PCP (phencyclidine), and other hallucinogens.⁴Includes Rohypnol®, ketamine (Special K), GHB (gamma hydroxybutyrate), and MDMA (ecstasy).⁵Includes inhalants, over-the-counter, and other drugs not specified.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

Exhibit 4. Demographic Characteristics of Clients Admitted to Treatment, by Percentage, State of Colorado: 2013

Characteristics	Alcohol ¹ Only or in Combination	Marijuana (MJ)	Cocaine	Meth- amphet- amine	Heroin	Other Opioids	Sedatives	Other Stimu- lants ²	Hallu- cinogens	“Club Drugs”	All Other ³
Total (N=32,654)	(12,569)	(5,651)	(1,683)	(5,357)	(3,015)	(2,189)	(167)	(69)	(51)	(137)	(250)
Gender	%	%	%	%	%	%	%	%	%	%	%
Male	69.1	77.2	61.7	53.9	63.1	50.9	45.5	58.0	90.2	65.0	73.2
Female	30.9	22.8	38.3	46.1	36.9	49.1	54.5	42.0	9.8	35.0	26.8
Race/Ethnicity	%	%	%	%	%	%	%	%	%	%	%
White	64.3	51.9	36.7	71.3	75.7	70.4	84.4	73.9	70.6	78.1	50.0
African-American	6.3	13.2	27.8	2.5	3.0	2.2	3.0	7.2	7.8	3.6	14.8
Hispanic	23.9	31.1	32.4	22.3	18.0	24.8	9.6	13.0	13.7	16.1	29.2
Other	5.5	3.8	3.1	3.9	3.3	2.6	3.0	5.9	7.9	2.2	6.0
Age at Admission											
Younger than 18	1.5	23.2	0.8	1.6	1.9	2.2	1.8	4.3	5.9	1.5	11.2
18–24	14.6	27.5	9.7	15.9	38.1	23.2	14.4	21.7	47.1	25.5	23.2
25–34	32.6	30.0	27.6	43.5	35.4	42.5	38.9	34.8	29.4	41.6	31.6
35–44	23.1	12.1	28.9	24.7	14.8	17.6	22.2	23.2	7.8	25.5	15.2
45–54	19.5	5.9	25.4	12.4	5.9	9.5	14.4	11.6	9.8	5.8	10.4
55 and Older	8.8	1.3	7.6	1.9	4.0	5.0	8.4	4.3	0.0	0.0	8.4
Route of Administration											
Smoking	0.2	94.0	58.1	61.5	20.0	9.8	0.6	23.2	21.6	48.9	12.8
Inhaling	0.2	3.1	32.4	6.3	3.5	11.4	4.2	10.1	5.9	8.8	10.4
Injecting	0.1	0.0	5.9	29.9	74.9	12.3	4.8	11.6	3.9	15.3	1.2
Oral/Other	99.5	2.9	3.5	2.3	1.5	66.4	90.4	55.0	68.6	27.0	75.6
Secondary Drug	Marijuana	Alcohol	Alcohol	Marijuana	Cocaine & Opioids	Marijuana & Alcohol	Alcohol & Opioid	Alcohol	Marijuana	Marijuana & Alcohol	Alcohol
	24.3	37.1	28.5	29.3	18.3 15.4	17.3 12.1	20.4 23.4	20.3	37.3	28.5 19.7	7.6
Tertiary Drug	Marijuana	Alcohol	Alcohol & Marijuana	Alcohol & Marijuana	Marijuana	Alcohol & Marijuana	Alcohol & Marijuana	Alcohol	Marijuana & Alcohol	Marijuana	Alcohol
	3.9	5.7	11.3 9.8	10.9 9.2	11.9	8.3 7.1	9.6 9.0	15.9	19.6 13.7	12.4	3.2

¹Includes alcohol only or in combination with other drugs.²Includes other stimulants (e.g., Ritalin®) and amphetamines (e.g., Benzedrine®, Dexadrine®, and Desoxyn®).³Includes over-the-counter drugs, inhalants, anabolic steroids, and other nonclassified substances.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

Exhibit 5. Demographic Characteristics of Clients Admitted to Treatment, by Percentage, Denver/Boulder Metropolitan Area: 2013

Characteristics	Alcohol ¹ Only or in Combo	Marijuana (MJ)	Cocaine	Meth- amphet- amine	Heroin	Other Opioid	Sedatives	Other Stimu- lants ²	Hallu- cinogens	“Club Drugs”	All Other ³
Total (N=13,040)	(5,342)	(2,785)	(895)	(1,617)	(1,676)	(816)	(70)	(18)	(28)	(69)	(145)
Gender	%	%	%	%	%	%	%	%	%	%	%
Male	68.7	79.9	62.2	61.0	64.4	48.9	47.1	66.7	96.4	68.1	78.6
Female	31.3	20.1	37.8	39.0	35.6	51.1	52.9	33.3	3.6	31.9	21.4
Race/Ethnicity											
White	61.3	44.2	35.2	75.1	76.8	75.1	84.3	83.3	71.4	81.2	39.3
African-American	9.4	18.3	31.3	2.4	3.8	3.3	2.9	16.7	10.7	2.9	22.1
Hispanic	24.4	33.3	29.9	18.7	15.8	20.0	7.1	0.0	10.7	13.0	33.8
Other	4.9	4.2	3.6	3.8	3.6	1.6	5.7	0.0	7.2	2.9	4.8
Age at Admission											
Younger than 18	1.2	26.7	0.7	1.4	2.0	1.5	0.0	5.6	3.6	2.9	10.3
18–24	14.6	26.4	9.4	13.1	34.1	16.1	12.9	11.1	46.4	20.3	18.6
25–34	33.0	28.8	27.4	42.4	35.6	45.1	38.6	27.8	25.0	43.5	37.2
35–44	23.9	11.0	28.2	27.6	16.2	21.3	28.6	38.9	7.1	27.5	12.4
45–54	18.7	5.7	26.7	13.6	7.0	10.3	12.9	11.1	17.9	5.8	12.4
55 and Older	8.6	1.4	7.7	2.0	5.0	5.8	7.1	5.6	0.0	0.0	9.0
Route of Administration											
Smoking	0.2	92.1	56.4	59.4	21.4	7.1	1.4	22.2	17.9	43.5	9.0
Inhaling	0.4	5.4	35.1	7.2	4.3	8.9	2.9	22.2	3.6	10.1	6.9
Injecting	0.4	0.0	5.0	30.2	72.3	7.4	4.3	5.6	3.6	10.1	0.7
Oral/Other	99.0	2.5	3.5	3.2	2.0	76.6	91.4	50.0	75.0	36.2	83.4
Secondary Drug	Marijuana	Alcohol	Alcohol & Marijuana	Marijuana & Alcohol	Cocaine & Marijuana	Marijuana & Alcohol	Alcohol & Other Opioid	Marijuana & Alcohol	Marijuana & Alcohol	Marijuana	Alcohol
	24.6	38.1	30.7 21.3	26.7 19.6	19.9 15.3	15.6 14.7	18.6 25.7	16.7 11.1	28.6 14.3	27.5	6.9
Tertiary Drug	Cocaine & Marijuana	Alcohol & Cocaine	Alcohol & Marijuana	Marijuana	Marijuana	Alcohol & Marijuana	Alcohol	Marijuana	Marijuana	Alcohol	Marijuana
	4.0 3.7	4.7 4.9	10.3 9.5	11.1 10	10.3	8.6 7.0	7.1	5.6	25.0	14.3	2.1

¹Includes alcohol only or in combination with other drugs.²Includes other stimulants (e.g., Ritalin®) and amphetamines (e.g., Benzedrine®, Dexadrine®, and Desoxyn®).³Includes over-the-counter drugs, inhalants, anabolic steroids, and other nonclassified substances.

SOURCE: Drug/Alcohol Coordinated Data System, Alcohol and Drug Abuse Division, Colorado Department of Human Services

Exhibit 6. Number and Percentage of NFLIS Reports Among Drug Items Analyzed, by Drug Type, Based on Denver Top 10 Drugs, Denver¹ and the United States: 2013²

Drug	Denver Area		United States	
	N	%	N	%
Cocaine	2,456	24.4	202,853	15.4
Methamphetamine	2,132	21.1	192,607	14.6
Marijuana	1,556	15.4	413,008	31.4
Heroin	1,414	14.0	134,664	10.2
XLR-11	264	2.6	16,536	1.3
Oxycodone	215	2.1	41,350	3.1
Alprazolam	120	1.2	31,407	2.4
Hydrocodone	95	0.9	32,835	2.5
AB-FUBINACA	89	0.9	1,637	0.1
5F-PB-22	59	0.7	1,690	0.1

¹Denver area in this comparison includes Denver, Jefferson, and Arapahoe Counties.

²Data are for January–December 2013 and include primary, secondary, and tertiary reports.

SOURCE: NFLIS, DEA, May 28, 2014

Exhibit 7. Number and Percentage of Newly Reported HIV Cases, by Exposure Category, Colorado: 2013

Exposure Category	Newly Reported HIV Cases	
	Number	Percentage
MSM	181	60.0
IDU	11	3.6
MSM/IDU	5	1.7
Heterosexual	40	13.2
Pediatric	4	1.3
No Identified Risk/Other	61	20.2
Total	302	100.0

Note: MSM=men who have sex with men; IDU= injection drug user; Pediatric cases are individuals younger than 13 years at the time of HIV or AIDS diagnosis.

SOURCE: Colorado Department of Public Health and Environment